



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF
STATE PLANNING COORDINATION

May 13, 2005

Mr. Steve Tull
Tull/Ramey, Ltd
107 Pennsylvania Avenue
Seaford, DE 19973

RE: PLUS review – PLUS 2005-04-15; Cypress Landing

Dear Mr. Tull:

Thank you for meeting with State agency planners on April 27, 2005 to discuss the proposed plans for the Cypress Landing project to be located at 8666 Concord Road near Blades. It should be noted that this property is proposed for annexation into the Town of Blades. According to the information received, you are seeking a rezoning from AR-1 to AR-3 for the purpose of 90 residential lots on 13 acres.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that, if annexed the Town of Blades would be the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the Town.

Executive Summary

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The full text of this letter represents the official state response to this project. ***Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.***

State Strategies/Project Location

- This proposal is located within Investment Levels 1 and 2 according to the Strategies for State Policies and Spending and is proposed for annexation into the Town of Blades. State policies generally support development activities within Investment Levels 1 and 2.

Street Design and Transportation

- DelDOTs initial comment at the PLUS meeting was that an access point on Concord Road would be desirable. At the meeting, they heard two things that could change that opinion. First, the Town and developer mentioned the connection to Little Meadows. Second, the Town indicated that there may be a sight distance problem with access on Concord Road. DelDOT will evaluate the situation further as plans for the project are developed. Any entrance, on Concord Road or elsewhere, will have to have adequate sight distance or it will not be permitted.
- DelDOT recommends that if the street entering from Brickyard Road remains straight as shown in the current layout, traffic calming along that street be included in the plan for the project to reduce the potential for speeding.
- There is a pair of offset tee intersections internal to the site. While they are offset in the proper direction if an offset is necessary, a single four-way intersection is generally safer and more efficient than a pair of offset tees. If there is not an overriding reason to keep them offset, it is recommended that they be replaced with a four-way intersection.

Natural and Cultural Resources

- Given the environmentally sensitive nature of this watershed, the Department believes that the applicant should devote more effort to the implementation of innovative efforts or BMPs to reduce impervious cover. Using pervious materials in lieu of impervious paving surfaces (asphalt or concrete), can significantly reduce the amount of pollutant-laden surface runoff into wetlands and streams.
- Because there is strong evidence that federally regulated wetlands exist on site, a wetland delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified by the Corps of Engineers through the Jurisdictional Determination process.
- Lot lines should be removed from the wetlands on-site, and vegetated buffers should be employed around the wetlands.

- It is recommended that most open space be relocated to areas in the western portion of the parcel along the wetlands and that plans include reforestation and meadow restoration in areas adjacent to the existing forest to the south.
- A portion of the site falls within an excellent recharge area (see attached map). The Water Resource Protection Area section of the letter includes some recommendations for impervious cover thresholds in this area.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: Ann Marie Townshend 739-3090

The Office of State Planning Coordination notes that this proposal is located within Investment Levels 1 and 2 according to the Strategies for State Policies and Spending and is proposed for annexation into the Town of Blades. State policies generally support development activities within Investment Levels 1 and 2.

The Office of State Planning Coordination is currently reviewing the plan of services for annexation and will comment to the Town of Blades separately regarding the annexation upon completion of that review.

We are pleased to hear that the Town and the developer will be pursuing street connections to Little Meadows and the Town's street network. We encourage you to continue pursuing this connection, as well as other potential connections for bicycle and pedestrian connections from this proposal to the existing town.

Whenever forested areas on the site will not be preserved, we suggest that you work with the Urban and Community Forest Program to develop a plan for forest mitigation on the site. For assistance with tree mitigation and landscape design on the site, please contact Bryan Hall, Urban Forester, of the Delaware Forest Service.

State Historic Preservation Office (SHPO) – Contact: Alice Guerrant 739-5685

This parcel has a known prehistoric archaeological site near the river (S-605). It is adjacent to two historic houses along Concord Rd. The State Historic Preservation Office requests that the developer include appropriate landscaping to screen the view of this development from them.

The owner/developer noted that a concrete plant stood on the parcel on Brickyard Rd during the 1940s. The SHPO would appreciate any further information he can give them on that plant.

If the owner/developer proceeds with plans to stabilize the river bank, he will be required to get an Army Corps of Engineers permit, which will in turn require that he consult with the SHP office under Section 106 of the National Historic Preservation Act of 1966 (as

amended). This will probably require him to hire an archaeologist to locate and mitigate any damage to the archaeological site prior to construction. The SHPO will be happy to help him through this process.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) While it was not shown on the plan presented, the Town and the developer indicated at the PLUS meeting that a street connection is proposed to the adjacent Little Meadows subdivision, which is already in the Town. DelDOT cannot address specific aspects of this connection, having not seen its location or design but they strongly support the concept of connecting streets in the subject development to other Town streets.
- 2) Although the subject land is contiguous to the Town, the plan presented at PLUS would make the proposed development a functional enclave because a person in the Town would have to leave the Town to enter the development. In part, DelDOT's policy on municipal annexations, is to oppose the creation of such enclaves. They would not be opposed to this annexation in any of the following circumstances. First, the Town could require the street connection mentioned in Comment 1 above. Second, the Town could annex the remaining eight strip development lots on the south side of Concord Road west of Brickyard Road at the same time as the subject land. Third, the Town could annex the remaining three strip development lots on the south side of Concord Road west of the property frontage first or at the same time and the developer could create an entrance along that frontage.
- 3) DelDOT's initial comment at the PLUS meeting was that an access point on Concord Road would be desirable. At the meeting, they heard two things that could change that opinion. First, the Town and developer mentioned the connection to Little Meadows. Second, the Town indicated that there may be a sight distance problem with access on Concord Road. DelDOT will evaluate the situation further as plans for the project are developed. Any entrance, on Concord Road or elsewhere, will have to have adequate sight distance or it will not be permitted.
- 4) Concord Road is classified as a collector road and Brickyard Road is classified as a local road. Local roads in Delaware typically have right-of-way widths ranging from 33 to 50 feet. Collector roads generally have somewhat wider rights-of-way. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 40 feet from the centerline on collector roads and 30 feet from the centerline on local roads. Therefore they will require right-of-way dedication to provide any additional width needed from this project.
- 5) The shape of the assembled parcels limits the number of possible layouts for the project, but DelDOT is concerned about the possibility of conflicts between

vehicles speeding along the street entering from Brickyard Road and vehicles backing out of the parking spaces in front of the townhouses there. They understand that there is still some flexibility in the street layout, but to the extent that the street is straight, DelDOT recommends that traffic calming along that street be included in the plan for the project. More information on traffic calming is available in the DelDOT Traffic Calming Manual, which is available at http://www.deldot.gov/static/pubs_forms/manuals/traffic_calming/DelDotFinal.pdf. For specific questions, the Town or the developer may contact Mr. Michael Somers of our Traffic Section. Mr. Somers may be reached at (302) 659-2024.

- 6) There is a pair of offset tee intersections internal to the site. While they are offset in the proper direction if an offset is necessary, a single four-way intersection is generally safer and more efficient than a pair of offset tees. If there is not an overriding reason to keep them offset, it is recommended that they be replaced with a four-way intersection.
- 7) DelDOT may require that the site entrance on Brickyard Road be aligned opposite the rear driveway of the recently opened Royal Farms on US Route 13.
- 8) The developer's site engineer should contact our Subdivision Manager for Sussex County, Mr. John Fiori, regarding our requirements for access. Mr. Fiori may be reached at (302) 760-2260.

The Department of Natural Resources and Environmental Control – Contact: Kevin Coyle 739-3091

Green Infrastructure

Portions or all of the lands associated with this proposal are within the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61 that represents a network of ecologically important natural resource lands of special state conservation interest.

Green infrastructure is defined as Delaware's natural life support system of parks and preserves, woodlands and wildlife areas, wetlands and waterways, productive agricultural and forest land, greenways, cultural, historic and recreational sites and other natural areas all with conservation value. Preserving Delaware's Green Infrastructure network will support and enhance biodiversity and functional ecosystems, protect native plant and animal species, improve air and water quality, prevent flooding, lessen the disruption to natural landscapes, provide opportunities for profitable farming and forestry enterprises, limit invasive species, and foster ecotourism.

Voluntary stewardship by private landowners is essential to green infrastructure conservation in Delaware, since approximately 80 percent of the State's land base is in private hands. It is in that spirit of stewardship that the Department appeals to the

landowner and development team to protect sensitive resources through an appropriate site design.

Soils

According to the Sussex County soil survey, Evesboro was mapped in the immediate vicinity of the proposed construction. Evesboro is an excessively well-drained upland soil that has moderate limitations on account of its rapid permeability.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence and palustrine emergent, palustrine open water, and palustrine shrub scrub wetlands on this site. Because there is strong evidence that federally regulated wetlands exist on site, a wetland delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified by the Corps of Engineers through the Jurisdictional Determination process.

Site plans clearly indicate that wetlands will be directly impacted. Impacts to these wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act; impacts to tidal wetlands are also regulated by the DNREC Division of Water Resources, Wetlands and Subaqueous Lands Section. In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the Wetlands and Subaqueous Lands Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

Any work in streams may require a State of Delaware Subaqueous Lands Permit in addition to federal wetlands permits. To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-4691 to schedule a meeting.

Vegetated buffers comprised of native trees, shrubs or no-mow grasses, of no less than 100 feet should be employed from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

ERES Waters

This project is located adjacent to environmentally sensitive receiving waters (Nanticoke River) of the Chesapeake Bay Watershed; designated as waters having Exceptional

Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 11.5 of Delaware's "Surface Water Quality Standards" (as amended August 11, 1999), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of nutrient runoff through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 11.5(e) of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree practicable, or where attainable, a standard requiring no discharge of pollutants.

TMDLs

With the adoption of Total Maximum Daily Loads (TMDLs) as a "nutrient-runoff-mitigation strategy" for reducing nutrients in the Nanticoke River and Broad Creek drainages of the Chesapeake Bay Watershed, reduction of nitrogen and phosphorus loading will be obligatory. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water- quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. In the Nanticoke River subwatershed, "target-rate-reductions" of 30 and 50 percent will be required for nitrogen and phosphorus, respectively.

Although TMDLs are authorized under federal code, states are charged with developing and implementing standards to support those desired use goals. The Jurisdictional authority for attaining these use goals fall under the auspices of Section 11.5 of the State of Delaware's Surface Water Quality Standards (as amended August 11, 1999), and will be achieved via nutrient reductions referred to as "pollution control strategies."

In order for the applicant to verify compliance with the TMDL mandate, a full nutrient accounting process known as nutrient budget should be prepared. The developer/consultant should contact Lyle Jones (739-4590) in the Department's Watershed Assessment Section for further information regarding the acceptable protocol for performing this calculation.

The developer is encouraged to employ BMPs (or other pollution control strategies) such as stormwater management and riparian buffers to mitigate nutrient runoff into adjoining streams or watercourses.

Impervious Cover

Given the environmentally sensitive nature of this watershed, the Department believes that the applicant should devote more effort to the implementation of innovative efforts or BMPs to reduce impervious cover. Using pervious materials in lieu of impervious

paving surfaces (asphalt or concrete), can significantly reduce the amount of pollutant-laden surface runoff into wetlands and streams.

Water Supply

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-3665.

Water Resource Protection Areas

A portion of the site falls within an excellent recharge area (see attached map). According to the State law that created the Source Water Protection Program, county and municipal governments with more than 2,000 residents will be required to enact ordinances to protect Water Resource Protection Areas. Municipalities with fewer than 2,000 residents are encouraged to enact such ordinances. The following language has been excerpted from the Source Water Protection Guidance Manual for Local Governments, Supplement 1 - Ground-Water Recharge Design Methodology. While the local ordinances are not yet in place, the developer may find the language useful in modifying the site plan to protect the wellhead protection area.

Water Resource Protection Areas (WRPAs) are defined as (1) surface water areas such as floodplains, limestone aquifers, and reservoir watersheds, (2) wellhead areas, or (3) excellent recharge areas. The purpose of an impervious cover threshold is to minimize loss of recharge and protect the quality and quantity of ground and surface water supplies in WRPAs.

New development in WRPAs may exceed the 20 % impervious cover threshold, but be no more than 50 % impervious, provided the applicant submits an environmental assessment report recommending a climatic water budget and facilities to augment recharge. The environmental assessment must document that post-development recharge will be no less than predevelopment recharge when computed on an annual basis.

Commonly, the applicant offsets the loss of recharge due to impervious cover by constructing recharge basins that convey relatively pure rooftop runoff for infiltration to ground water.

The Department recommends the following (ranked in order of preference):

- 1) Preserve WRPA's as open space and parks by acquisition or conservation easement.
- 2) Limit impervious cover of new development to 20 % by right within WRPA's.
- 3) Allow impervious cover of new development to exceed 20% within WRPA's (but no more than 50% impervious) provided the applicant develops recharge facilities that directly infiltrates rooftop runoff.
- 4) Allow impervious cover of new development to exceed 20% within WRPA's (but no more than 50% impervious) provided the applicant develops recharge facilities that infiltrate stormwater runoff from forested and/or grassed surfaces with pretreatment.

For more information, refer to:

Source Water Protection Guidance Manual for the Local Governments of Delaware at <http://www.wr.udel.edu/swaphome/phase2/Manual/SwappManual.pdf>

and

Ground-Water Recharge Design Methodology at http://www.wr.udel.edu/swaphome/phase2/Manual/SwappManual_supplement_1.pdf

Sediment and Erosion Control/Stormwater Management

1. Please submit a sediment control and stormwater management plan to the Sussex Conservation District for review. No construction (i.e. clearing, filling, grading, etc.) shall take place on-site until a sediment control and stormwater management plan has been approved by the Conservation District.
2. Please indicate on the sediment and stormwater management plan who shall be responsible for maintenance of the stormwater management facilities both during construction and after.
3. During the design of the sediment control and stormwater management plan, considerations should be made for maintenance (i.e. access, easements, etc.) of any structures or facilities.

4. During the design of the stormwater management facility please note that both stormwater quantity and quality must be addressed.
5. If a stormwater management pond is going to be utilized as a sediment trap/basin during construction it must be designed to accommodate 3600 cubic feet of storage per acre of contributing drainage area until project stabilization is complete.
6. Specify First Floor elevations for all lots.
7. All ponds are required to be constructed per pond code 378.
8. Please note that if the stormwater facilities will impact wetlands, a permit must be provided to the District prior to receiving approval.
9. Due to the proximity to sensitive areas, the Conservation District will require reinforced and super silt fence to adequately protect wetland areas during the construction of the site
10. Please contact the Conservation District when design of stormwater management facility is initiated, as we would like to work closely with you in its design.

All stormwater ponds should maintain a 100-foot minimum isolation distance from wetlands and water bodies.

Open Space

Site plans show an area of community open space within the middle of this development. In many cases, large open space areas abutting back yards are not well used by the community and are expensive to maintain. It is recommended that most open space be relocated to areas in the western portion of the parcel along the wetlands and that plans include reforestation and meadow restoration in areas adjacent to the existing forest to the south. Enlarging and enhancing community open space near this forest will increase its value for birds and wildlife and create recreational opportunities for residents by allowing all residents access to and views of the forest. It may also help reduce the long term cost of open space maintenance for the community.

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. These areas should be clearly marked and delineated so that residents understand their importance and so that homeowner activities do not infringe upon these areas.

Rare/Threatened/Endangered Species

There are numerous rare plants and freshwater mussel species within Deep Creek that could be impacted by run-off from this development if proper sedimentation and erosion controls are not employed. Cumulative impacts from all the development that has taken place in recent years has lead to algae blooms and other water quality problems. The Nanticoke River system is the most diverse in the state with regards to freshwater mussels and mussels are especially sensitive to detrimental changes in water quality. In addition, Deep Creek is utilized by shad and river herring during the spring as a spawning and nursery habitat. Although these species are not listed as rare, they are important to both commercial and recreational fisheries. These species are also an important forage base for other fish species, some of which are recreationally important game fish.

Recreational Fishing Opportunity

There is an existing pond on the property and the applicant expressed interest in creating a fishing opportunity for future residents. DNREC does not typically encourage fishing in residential areas as the resulting water quality from run-off can be poor for fish growth and survival. Fish kills can also occur if algae blooms result in reduced oxygen availability. In addition, they discourage people from keeping and eating fish from these types of ponds. However, if the existing water quality is good and an adequate vegetative buffer is designed around the pond, a fishing opportunity could be created. Please contact our Division's freshwater fisheries biologist, Cathy Martin at 653-2887 to discuss this issue and possibly schedule a site visit.

Shoreline Project

The applicant mentioned that about 600 feet of shoreline along Deep Creek was going to be developed as an amenity for the residents of this development. The construction of piers and docks along the Nanticoke River and its tributaries has escalated in recent years. The cumulative impacts from these projects may detrimentally impact fisheries in several ways: 1) removal of trees along the shoreline can reduce the effects of shading which is important for maintaining water temperature conducive to spawning, 2) alteration of shoreline habitat can affect the distribution of benthic and macro-invertebrates which serve as the forage base for many fish species, and 3) the removal of valuable habitat (especially nursery habitat) by the use of man-made materials along the shoreline. DNREC encourages the applicant to utilize natural and more environmentally sensitive methods for this project and consider not using rip-rap or other methods of shoreline hardening.

Nuisance Waterfowl

If stormwater management ponds are incorporated into the site plan, they may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can

become aggressive during the nesting season. Short manicured grass around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, property managers or owners will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Recreation

DNREC appreciates the concept of incorporating the existing pond into the design as an attractive natural feature for all to enjoy. The pond and the surrounding area can provide many recreation opportunities (see high priorities below).

It is recommended that sidewalks be built fronting every residence and stub streets. A complete system of sidewalks will: 1) fulfill the recreation need for walking and biking facilities, 2) provide opportunities for neighbors to interact in the community, and 3) facilitate safe, convenient off-road access to neighboring communities, parks, public mass transit stops, schools, stores, work, etc.

The Division of Parks and Recreation conducted a telephone survey of Delaware residents to gather information on outdoor recreation patterns and preferences as well as other information on their landscape perception. These findings are the foundation of the 2003-2008 Statewide Comprehensive Outdoor Recreation Plan (SCORP) providing guidance for investments in needed outdoor recreation facilities. The high and moderate facility needs in Western Sussex County are listed below. Consideration should be given to incorporate some of these recreation opportunities into the project. For additional information about the outdoor recreation priorities, contact Bob Ehemann at 739-5285.

High priorities are Walking or Jogging Paths, Picnic Areas, Bike Paths and Fishing Areas.

Moderate priorities are Swimming Pools, Baseball/Softball fields, Hiking Trails, Basketball Courts, Campgrounds and Playgrounds.

Underground Storage Tanks

There are 3 inactive LUST sites located near the proposed project:

Massey's Amoco (Facility 5-000161, Project S9305181)

Fran's Dairy Market (Facility 5-000121, Project S9011099)

Earth Movers Inc. (Facility 5-000384, Project S9201007).

There is 1 active LUST site located near the proposed project:

Massey's Amoco (Facility 5-000161, Project S8805016).

No environmental impact is expected from the above inactive/active LUST sites. However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would be need to be changed due to petroleum contamination. Should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel in the contaminated areas.

Solid Waste

Each Delaware household generates approximately 3,600 pounds of solid waste per year. On average each new house constructed generates an additional 10,000 pounds of construction waste. Due to Delaware's present rate of growth and the impact that growth will have on the state's existing landfill capacity, the applicant is requested to estimate the amount of solid waste that will be generated as a result of construction and occupancy.

Air Quality

Air pollution threatens the health of human beings and other living things on our planet. While often invisible, pollutants in the air create smog and acid rain, cause cancer or other serious health effects, diminish the protective ozone layer in the upper atmosphere, and contribute to the potential for world climate change. Breathing polluted air can have numerous effects on human health, including respiratory problems, hospitalization for heart or lung disease, and even premature death. Some can also have effects on aquatic life, vegetation, and animals.

The Department of Natural Resources and Environmental Control is asking that local jurisdictions consider mitigation to help resolve this issue. Mitigation might involve limiting large new developments to growth zones, focusing development to urban areas capable of providing mass transit services, requiring more energy efficient homes which would lessen air quality impacts, and promoting walkability and bikability within and between developments and town centers.

Once complete, vehicle emissions associated with this project are estimated be 6.9 tons (13,814.1 pounds) per year of VOC (volatile organic compounds), 5.7 tons (11,437.1 pounds) per year of NOx (nitrogen oxides), 4.2 tons (8,438.5 pounds) per year of SO2 (sulfur dioxide), 0.4 ton (751.2 pounds) per year of fine particulates and 577.8 tons (1,155,528.6 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated be 2.8 tons (5,571.8 pounds) per year of VOC (volatile organic compounds), 0.3 ton (613.1 pounds) per year of NO_x (nitrogen oxides), 0.3 ton (508.8 pounds) per year of SO₂ (sulfur dioxide), 0.3 ton (656.5 pounds) per year of fine particulates and 11.3 tons (22,587.0 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.1 tons (2,208.3 pounds) per year of NO_x (nitrogen oxides), 3.8 tons (7,681.0 pounds) per year of SO₂ (sulfur dioxide) and 566.5 tons (1,132,941.6 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	6.9	5.7	4.2	0.4	577.8
Residential	2.8	0.3	0.3	0.3	11.3
Electrical Power		1.1	3.8		566.5
TOTAL	9.7	7.1	8.3	0.7	1155.6

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.1 tons of nitrogen oxides per year and 3.8 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage <http://www.energystar.gov/>:

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment.”

Our energy office in DNREC is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on

energy costs and reduce air pollution. We highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

State Fire Marshal's Office – Contact: Duane Fox 302-856-5298

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements:**

- Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers.
- Where a water distribution system is proposed for townhouse type dwelling sites, the infrastructure for fire protection water shall be provided, including the size of water mains.

b. **Fire Protection Features:**

- For townhouse buildings, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan

c. **Accessibility:**

- All premises which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Brickyard Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

d. **Gas Piping and System Information:**

- Provide type of fuel proposed, and show locations of bulk containers on plan.

e. **Required Notes:**

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Proposed Use
- Square footage of each structure (Total of all Floors)
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Name of Water Provider
- Letter from Water Provider approving the system layout
- Townhouse 2-hr separation wall details shall be shown on site plans
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Mark Davis 739-4811

The Delaware Department of Agriculture and the Delaware Forest Service has no objections to this site at this time; however, the Delaware Forest Service encourages the developer to contact them if they have any questions concerning tree preservation and tree planting opportunities within the site.

Public Service Commission - Contact: Andrea Maucher 739-4247

If this property is annexed, the Town should notify the Public Service Commission when the annexation is completed. Should the Town wish to serve this property without annexing it, they will need to apply to the Commission for a CPCN.

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

If the project connects to public wastewater services from the County, and the project lies outside of the service territory established in October 2004, then the County must update the information it filed with the Commission.

Delaware State Housing Authority – Contact Karen Horton 739-4263

It is DSHA's understanding that all 90 of these units will be universally designed and therefore includes features that will benefit everyone – including persons with disabilities. DSHA is very supportive of this proposal as it will allow families to live together in preferred places instead of facing the emotional and economic costs of moving or institutionalizing a family member. Universal designed housing is also meant to be [housing for the lifespan of all people](#) so that persons can "age in place" without incurring significant remodeling expenses. Universal design is a relatively new concept in Delaware and prototypes such as this development are needed to facilitate housing for all people.

Delaware Emergency Management Agency – Contact: Don Knox 659-3362

Due to the number of townhouse units being proposed, an impact to public safety is foreseen by implementation of this project. The developer should notify the police, fire service, and emergency medical response organization serving the Town of Blades, to keep them apprised of all development activities.

Department of Education – Contact: Nick Vacirca 739-4658

90 dwelling units could generate an estimated 45 additional students for the Seaford School District. Sussex County does not have school concurrence legislation at this time. We recommend that the developer submit a package to the school district for informational purposes.

If the development is approved and built, please use the following information for school transportation planning. If there are homes more than 1/2 mile from the nearest public road (outside the development), developers should plan wide enough streets so that large school buses can access and turn around (without backing) from the furthest areas within the development while picking up and dropping off students. Should there not be any sites more than 1/2 mile from the nearest public road, provisions for appropriate pick-up and drop-off at the development entrance should be included. The developer should work closely with the school district transportation supervisor

Sussex County - Contact: Richard Kautz 855-7878

The site is to be entirely within the town limits and does not directly impact County services or properties outside the town limits. The Town of Blades should request that there be a visual, landscaped buffer between the proposed development and the existing residential lots outside the corporate limits.

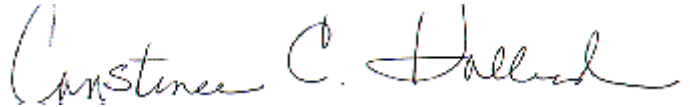
The Sussex County Engineer Comments:

The proposed project is in the Proposed Blades Planning Area. The project is contiguous to the existing Blades Sanitary Sewer District. Due to the close proximity to the Nanticoke River the Sussex County Engineering Department prefers a connection to the Sussex County wastewater system. Sussex County requires design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. A sewer concept plan must be submitted to the Sussex County Engineering Department for approval prior to any sewer construction. All costs associated with extending sewer service will be the sole responsibility of the developer. See attached letter from Mr. Russell W. Archut to Ms. Ann Marie Townsend concerning the availability of sewer capacity.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

A handwritten signature in dark ink, appearing to read "Constance C. Holland". The signature is fluid and cursive, with the first name "Constance" being the most prominent part.

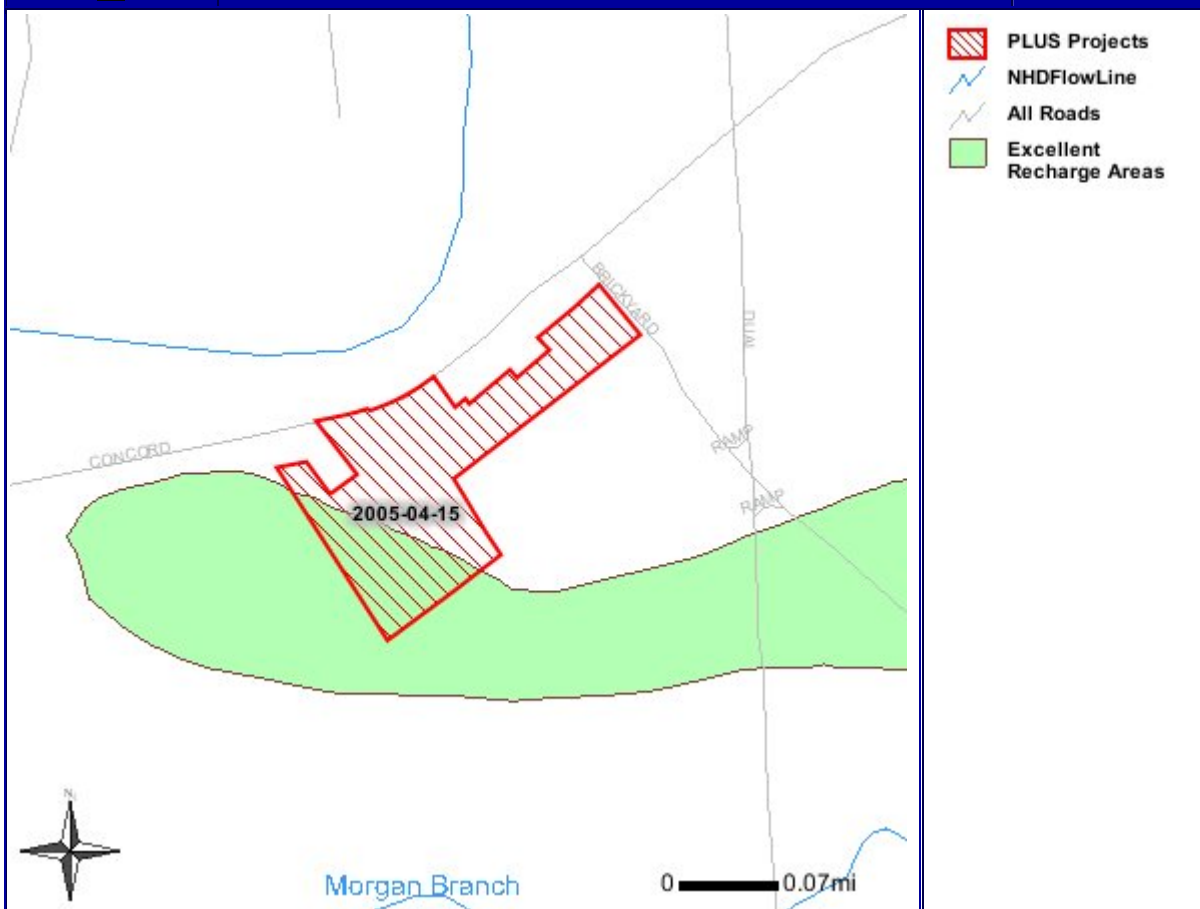
Constance C. Holland, AICP
Director

CC: Sussex County
Town of Blades



Cypress Landing

2005-04-15



This map was produced by the Delaware Department of Natural Resources and Environmental Control.

